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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Nicholas Mark Adams

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EXAMINER

JOYNER, KEVIN

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,192	Applicant(s) ADAMS ET AL.	
	Examiner KEVIN C. JOYNER	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-80 is/are pending in the application.
- 4a) Of the above claim(s) 61,62 and 73 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 51-60,63-72 and 74-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 4, 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 51-55, 57-59, 63, 65, 66, 70, 72 and 74-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry (U.S. Patent No. 5,480,615) in view of Watling (WO 00/74734).

Concerning claim 51, Curry discloses a method of decontaminating an enclosed space (column 1, lines 25-35) comprising the steps of:

Creating a recirculating heated airstream within an enclosed space by: (i) continuously drawing air from an atmosphere within the enclosed space to form an air stream (column 4, lines 5-25), (ii) heating the airstream while in the enclosed space (column 4, lines 5-15), and (iii) emitting the heated airstream back into the atmosphere within the enclosed space (Figure 3); and

Progressively introducing a sterilant/water vapor into the recirculating heated airstream so as to decontaminate surfaces in said space, wherein the recirculated heated airstream and introduction of the sterilant/water vapor mixture are performed by an apparatus that is disposed within the enclosed space (Figures 2-5; column 3, lines 40-68; column 4, lines 5-55).

Regarding claim 70, Curry discloses a method of decontaminating an enclosed space, the method comprising the steps of:

Activating a portable decontamination apparatus positioned within an enclosed space so that the decontamination apparatus performs the following functions within the enclosed space (column 1, lines 22-35):

(i) continuously drawing air from an atmosphere within the enclosed space to form an airstream within the decontamination apparatus (column 4, lines 5-21);

(ii) heating the airstream within the decontamination apparatus (column 4, lines 10-15);

(iii) vaporizing within the decontamination apparatus an aqueous sterilant (column 3, lines 40-50);

(iv) introducing the sterilant into the heated airstream (Figure 3); and

(v) emitting the heated airstream containing the sterilant from the decontamination apparatus into the atmosphere of the enclosed space (Figures 2-5; column 3, lines 40-68; column 4, lines 5-55).

Concerning claims 51 and 70, Curry does not appear to disclose that the method comprises the steps of introducing the sterilant by flash evaporating the sterilant in a manner such that the atmosphere within the enclosed space reaches a dew point that causes the sterilant within the atmosphere to simultaneously and continuously condense onto substantially all surfaces within the enclosed space. Curry also does not appear to disclose the particular type of sterilant utilized in the method; however hydrogen peroxide is extremely well known and thus conventionally utilized in the art.

Watling discloses a method of decontaminating an enclosed space by flash evaporating (page 5, lines 20-30) a hydrogen peroxide/water vapor into the enclosed space to decontaminate the surfaces of the enclosed space. Watling continues to disclose that the hydrogen peroxide/water vapor is progressively introduced into a recirculated heated airstream in a controlled manner such that the atmosphere within the enclosed space reaches a dew point that causes the sterilant within the atmosphere to simultaneously and continuously condense onto substantially all surfaces within the enclosed space (page 1, lines 23-31; page 2, lines 9-20). The reference provides motivation that such a method produces faster, more reliable surface decontamination as set forth on page 3, lines 30-37. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to control the step of introducing the sterilant of Curry by flash evaporating said sterilant and controlling it in the manner as

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set forth by Watling such that the atmosphere within the enclosed space reaches a dew point that causes the sterilant within the atmosphere to simultaneously and continuously condense onto substantially all surfaces within the enclosed space in order to produce faster, more reliable surface decontamination. Furthermore, since Curry does not disclose a particular sterilant, then one must look to the prior art to determine a suitable type. As such Watling discloses that hydrogen peroxide is a conventionally well known suitable sterilant for the decontamination of enclosed spaces. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize hydrogen peroxide as the sterilant in the method of Curry, as such is extremely well known as a suitable sterilant for the decontamination of enclosed spaces as exemplified by Watling.

Concerning claims 52, 63 and 76 Curry does not appear to disclose that the hydrogen peroxide is removed from the enclosed space by a catalyst after the dew point has been reached. However, Watling continues to disclose that the hydrogen peroxide is removed from the enclosed space after the dew point has been reached and the hydrogen peroxide/water vapor has condensed on the surfaces by circulating the atmosphere containing the hydrogen peroxide/water vapor over a catalyst (page 8, lines 30-37; page 9, lines 1-10). Such a removal is provided in order to render the air safe by decomposing any active gas (page 6, lines 1-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the step of removing the hydrogen peroxide from the enclosed space by a catalyst upon conclusion of the decontamination in the method of Curry in order to render the air safe by decomposing any active gas as exemplified by Watling.

Regarding claims 53, 55 and 75, Watling continues to disclose that the control of the hydrogen peroxide into the atmosphere is determined by measuring the condensation of the hydrogen peroxide/water vapor on the surfaces by a monitor (page 7, lines 20-27); and terminating the step of introducing hydrogen peroxide/ water vapor into the recirculating heated airstream when the measured condensation has reached a predefined level (page 8, lines 21-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to control the step of introducing the sterilant of Curry in the manner as set forth by Watling such that the atmosphere within the enclosed space reaches a dew point that causes the sterilant within the atmosphere to simultaneously and continuously condense onto substantially all surfaces within the enclosed space in order to produce faster, more reliable surface decontamination as exemplified by Watling.

Concerning claim 54, Watling also discloses that the method further comprises measuring the condensation in the enclosed space at a number of different locations by condensation monitors to ensure that the condensation has taken place throughout the enclosed space (page 6, lines 25-37; page 7, lines 1-16; page 8, lines 22-30). More specifically, the method comprises a dew point sensor, a condensation sensor, a gas sensor, a temperature sensor, and a sensor that measures the amount of liquid delivered to the evaporation chamber. Each sensor provided is located at various places throughout the enclosed space and sends an input to a control module (19) that calculates the condensation in the enclosure. Therefore, each sensor is a condensation monitor as broadly defined. Thus, it would have been obvious to one of ordinary skill in

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the art at the time of the invention to control the step of introducing the sterilant of Curry in the manner as set forth by Watling such that the atmosphere within the enclosed space reaches a dew point that causes the sterilant within the atmosphere to simultaneously and continuously condense onto substantially all surfaces within the enclosed space in order to produce faster, more reliable surface decontamination as exemplified by Watling.

Concerning claims 57, 58 and 72, Curry does not appear to disclose that the airstream is passed through a rotating nozzle. However, Watling continues to disclose that the method comprises delivering the heated airstream carrying the hydrogen peroxide/water vapor in a universally rotating jet in order to deliver the gas at a high velocity over a fixed pattern throughout the enclosed space (page 6, lines 14-20). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Curry to include a universally rotating jet for the dispersal of the hydrogen peroxide/water vapor in order to deliver the gas at a high velocity over a fixed pattern throughout the enclosed space as exemplified by Watling.

Regarding claim 59, Curry discloses using one or more fans within the enclosed space to disperse the hydrogen peroxide/water vapor throughout the enclosed space (column 4, lines 5-10). Regarding claim 66, Watling continues to disclose that the method controls the step of creating a recirculating heated airstream and progressively introducing the hydrogen peroxide/water vapor from outside the enclosed space (page 7, lines 20-37; page 8, lines 1-30). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to control the step of introducing the sterilant of

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Curry in the manner as set forth by Watling such that the atmosphere within the enclosed space reaches a dew point that causes the sterilant within the atmosphere to simultaneously and continuously condense onto substantially all surfaces within the enclosed space in order to produce faster, more reliable surface decontamination as exemplified by Watling.

Claims 65 and 74 disclose providing a plurality of the decontamination apparatus with the same recirculated airstreams and performing the same method steps as in the previous airstream of introducing hydrogen peroxide vapor into the airstreams. The Manual of Patent Examining Procedures discloses that in *In re Harza*, 274, F.2d 669, 124 USPQ 378 (CCPA 1960), a mere duplication of parts for a multiplied effect has no patentable significance unless a new and unexpected result is produced. Accordingly, the addition of a plurality of portable decontamination apparatus positioned within the enclosed space with a recirculated airstream and introducing hydrogen peroxide vapor into the airstreams is not considered to be patentably distinct from the disclosed method of Curry in view of Watling.

With regard to claim 77, Curry continues to disclose the portable decontamination apparatus is removed from the enclosed space after the decontamination is complete (column 4, lines 60-63). Concerning claim 78 Curry also discloses that the portable decontamination apparatus is positioned within a room wherein the walls of the room bound the enclosed space (column 3, lines 40-50). Concerning claims 79 and 80, the method of Curry in view of Watling will intrinsically

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provide a vapor that uniformly condenses on all of the surfaces within the enclosed space.

4. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Curry (U.S. Patent No. 5,480,615) in view of Watling (WO 00/74734) as applied to claim 55 above, and further in view of Dufresne et al (U.S. Patent No. 6,589,479).

Curry in view of Watling is relied upon as set forth above, wherein the reference already discloses that the hydrogen peroxide is removed from the enclosed space after the hydrogen peroxide/water vapor has reached the predetermined concentration.

Curry in view of Watling does not appear to disclose that biological indicators are used in the enclosed space to determine when the predetermined concentration of hydrogen peroxide/water vapor in the atmosphere has been reached. However, it is conventionally known in the art of sterilization to utilize biological indicators for such a purpose. Dufresne discloses an example of this commonly used teaching in a method for monitoring the sterilization of an enclosed space. The method continues to disclose that biological indicators are utilized in order to monitor the sterilization of the enclosed space and notify an operator by a color change on the indicator when the sterilization is complete (column 2, lines 1-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Curry in view of Watling to utilize biological indicators in order to monitor the sterilization of the enclosed space and notify an operator by a color change on the indicator when the sterilization is complete, as such is commonly known in the art of sterilization as exemplified by Dufresne.

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5. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Curry (U.S. Patent No. 5,480,615) in view of Watling (WO 00/74734) as applied to claim 51 above, and further in view of Martin (UK Patent Application No. GB 2 360 454 A).

Curry in view of Watling is relied upon as set forth above. Curry in view of Watling does not appear to disclose that the vapor produced contains 30 to 35% hydrogen peroxide and a balance of water. Martin discloses a method of decontaminating an enclosed space comprising: creating a recirculating heated airstream within an enclosed space by: (i) drawing air from an atmosphere within the enclosed space to form an air stream, (ii) heating the airstream while in the enclosed space, and (iii) emitting the heated airstream back into the atmosphere within the enclosed space: and introducing a sterilant to the airstream until the atmosphere within the space reaches a dew point that causes the sterilant within the atmosphere to condense onto a surface within the space (page 3, lines 1-15). The reference continues to disclose that a 30-35% of hydrogen peroxide solution is utilized because of its sporicidal effects and its fast decontamination (page 1, lines 25-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Curry in view of Watling to utilize a 30-35% hydrogen peroxide solution and a balance of water in order to take advantage of its sporicidal and decontaminating effects as exemplified by Martin.

6. Claims 64, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry (U.S. Patent No. 5,480,615) in view of Watling (WO 00/74734) as applied to claim 51 above, and further in view of Childers (U.S. Patent No. 5,173,258).

Curry in view of Watling is relied upon as set forth above. Curry in view of Watling does not appear to disclose that the method further comprises removing the hydrogen peroxide by using a heating/ventilation air conditioning system communicating with the enclosed space. Childers discloses a method of decontaminating an enclosed space comprising: creating a recirculating airstream in the enclosed space by (i) continuously drawing air from an atmosphere in the enclosed space, (ii) heating the airstream while in the enclosed space, and (iii) emitting the heated airstream back into the atmosphere in the enclosed space; and progressively introducing hydrogen peroxide vapor into the airstream (column 2, lines 1-30). The method continues to disclose that the hydrogen peroxide is removed from the enclosed space by using a heating/ventilation air conditioning system (column 9, lines 45-60) communicating with the system as disclosed in column 10, lines 5-15. More specifically the unit (10) is a ventilation system for the enclosure (12) that removes the hydrogen peroxide from the enclosure. Regarding claims 67 and 68, the method continues to disclose that the ventilation system (10) is utilized to dehumidify the atmosphere within the enclosed space to reduce the relative humidity thereof to a predetermined level prior to progressively introducing the hydrogen peroxide/water vapor into the recirculating airstream (column 2, lines 3-29). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Curry in view of Watling to utilize a ventilation system to remove the hydrogen peroxide from the enclosure and dehumidify the atmosphere within the enclosure in order to convert the

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sterilant to a suitable nature and to provide optimal conditions to introduce the hydrogen peroxide into the enclosed space as exemplified by Childers.

7. Claims 69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry (U.S. Patent No. 5,480,615) in view of Watling (WO 00/74734) as applied to claims 51 and 70 above, and further in view of Tongret (U.S. Patent No. 4,244,712).

Curry in view of Watling is relied upon as set forth above, wherein Curry discloses that the method steps of recirculating and introducing a sterilant into a heated airstream is performed by a portable apparatus in the enclosed space having a duct (Figure 3) with a fan (Figure 5) for delivering air through the duct, a heater (40) for heating air passing through the duct and means for delivering the sterilant vapor to the air passing through the duct (Figure 4) such that the duct is decontaminated by the vapor. Furthermore, Curry in view of Watling discloses a nozzle that is rotated universally to distribute the hydrogen peroxide vapor throughout the enclosed space as set forth with respect to claim 58.

Curry in view of Watling does not appear to disclose a filter for filtering air entering the duct. Tongret discloses a method of decontaminating an enclosed space by recirculating air with a portable apparatus comprising a duct, a fan (22) in the duct, and a sterilant generator for decontaminating surfaces in the enclosed space (column 1, lines 39-47). The reference continues to disclose a filter (24) for filtering air entering the duct that chemically absorbs impurities in the air (column 2, lines 45-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Curry in view of Watling to pass the air through a filter as the air is

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drawn from the atmosphere to the decontamination apparatus in order to chemically absorb any impurities that may be in the air as exemplified by Tongret.

Response to Arguments

8. Applicant's arguments with respect to claims 51-60, 63-72 and 74-80 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN C. JOYNER whose telephone number is (571)272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth L McKane/
Primary Examiner, Art Unit 1797

KCJ